ALASKA PIONEER FRUIT GROWERS NEWSLETTER

MARCH, 1991 Vol 6 NO. 3

A Publication of the Alaska Chapter, North American Fruit Explorers (NAFEX)

MEETING DATES

Mar. 21. 7 p.m. N.B.A. lunchroom. Dick Green will speak on kiwi fruit growing in Anchorage.
April 18. 7-9 p.m. Dimond Greenhouse, Anchorage grafting workshop.

DUES ARE DUE BEFORE MARCH 31 IF YOU WANT TO GET THE NEXT NEWSLETTER!

THREE NEW PUBLICATIONS FROM THE PLANT MATERIALS CENTER

Three publication are now available from the PMC. Anyone interested in tomatoes should get a copy of Cathy Wright's variety trials (Results of 1990 tomato variety observations) which compares harvest dates and yield for field-grown tomatoes. Plants from John Holm's breeding program in Fairbanks and selections from the USSR dominate the list, and comparisons are made between plants grown through poly mulch and those that were unmulched.

A second publication is Notice of Naming and Release of 'Kenai Carpet' Nagoonberry, Rubus arcticus L.. It is being released as an aggressive ground cover for large-scale landscape plantings and revegetation work. NAFEX members are probably more familiar with this plant as a desirable fruit crop. If you intend to grow it, you must be aware that it needs a pollinizer for fruit production. Contact the PMC or the Alaska Horticultural Assoc. for plant availability.

Lastly, the 1990 Annual Report for the PMC has been released, and it is full of information on Cathy Wright's horticulture program including tests with managing wild stands of blueberries, and small fruit variety trials. If you are interested in any of these publications, call or write the PMC at HC 02 Box 7440 Palmer, AK 99645, (907)745-4469.

QUERY FROM WHITEHORSE YUKON TERRITORY

I received a letter from Fred Dorward who is a national NAFEX member from Whitehorse. He is interested in getting information on sweetberry honeysuckle, Lonicera caerulea edulis, which is said to grow wild from British Columbia to Newfoundland. He also grows wild currants and gooseberries and has a collection of plants in his garden from

Yukon's southern border to Old Crow. Fred also grows apples, plums, and pears, and his plants are all about 2-3 years old. His address is:

Site 15 Comp 58
RR 2 Whitehorse
Yukon Y1A 5A5

Fred asked if Lonicera caerulea was native to Alaska, but according to Hulten's Flora of Alaska, it is not. We have only one species, L. involucrata, which occurs in southeast Alaska, and its fruit is bitter. In Fairbanks, we have grown L. caerulea and the var. edulis as ornamental shrubs for many years, and some local nurserymen claim it is the hardiest honeysuckle around. Despite its hardiness, supplies of this plant in "Lower 48" nurseries are scarce because there are many more desirable ornamental honeysuckle species. L caerulea is a large, dense shrub with bluish-green foliage and blue fruit. The fruit can be quite insipid, but the var. edulis is said to have sweeter fruit. I didn't even know the fruit was edible until I visited the Soviet Union last summer. At the Novosibirsk Botanical Garden we saw several species that were being used for fruit production, and a burgundy-colored sauce made from the fruit was very tasty. There are several active breeding programs in the Soviet Union and Scandinavia that are looking for larger-sized fruit, firmer fruit with fewer and smaller seeds.

Literature on this potential fruit crop is scarce. Below is a short paragraph excerpted from a chapter in Advances in Fruit Breeding, written by George Darrow (1975 Purdue Univ. Press).

"Though fruit of most honeysuckle species is insipid or objectionable in flavor, that of a few northern species is edible. In eastern Siberia and Tibet, L. caerulea edulis is eaten and made into preserves. The berries are quite tart. In Canada, Simonet (Pomona 4:112, 1971) reported that two cultivars 'George Bugnet' and 'Marie Bugnet' have been selected for milder taste. The 1 1/2 meter tall plants have stiff, erect branches and can be grown on soil too high in lime for blueberries. The berries are very early, very juicy, dark blue, and have many small seeds. They mature from late May to early August in Alberta, Canada, earlier than blueberries. They remain on the bushes in good condition for many weeks.

The species, L villosa, to which American edible-fruited species are referred, is closely related to L caerulea edulis, the edible honeysuckle of Siberia. "

The plants at the Experiment Station in Fairbanks are subject to occasional winter injury, but they consistently produce ripe fruit in August. Last year several of our plants died, but it was hard to tell if the cause was winter injury. The plants were very old and neglected. One of our largest bushes suffered serious damage from snow load. It was growing next to an old birdcherry tree that fell over in a summer storm. Thus, it was fully exposed to heavy snowfall and completely flat the next spring. The stiff, upright branches snapped at the crown. Other plants already growing in exposed sites were not injured. Seeds and plants might be hard to find, but this shrub might add a bit of variety to northern fruit-grower's gardens.

Researchers at the Swedish University of Agricultural Science at Balsgard, Kristianstad are also working on breeding work with honeysuckle. They have collected seeds of 5 species: L. caerulea edulis, L. altaica, L. kamtschatoca, L. regeliana and L. chamissoi. They tried cold, moist stratification of the seeds to encourage

germination, but results were poor. They have had good germination results by using fresh seeds that are removed from the pulp and not allowed to dry out. Seeds are placed on wet paper with one end of the paper dipping in water like a wick. After 1 week seeds are transferred to new, wet paper because mold growth is rampant. In 2-3 weeks, the seeds germinate. After cotyledons appear, the seeds are transferred to potting soil for further growth.

Another plant that is receiving a lot of attention in Scandinavia, USSR and China is the sea buckthorn, Hippophae rhamnoides. It is a dioecious (dī-ē'-shŭs; has male and female plants) shrub, and the female plants are covered with round or oblong, orange or yellow fruit beginning in August. The plant is quite ornamental when fruiting, having long, willowly branches bent nearly to the ground with cascades of pea-sized fruit. The fruit is very juicy when ripe and very high in Vit C; it has a distinctive flavor, but a texture that is not unlike apricot juice. Cultivar selection is important since some fruit is extremely insipid while others are tangy-sweet. The biggest problem for sea buckthorn growers is harvesting. The fruit has a very short pedicel (stem) and is held tenaciously to the branches. Presently, harvest is by hand, using what looks like a bent bobby pin to scrape the fruit from the branch. Breeders, however, are working on solving that problem.

In Fairbanks we have tried growing some ornamental selections of sea buckthorn with no success, but we have not given this species a good test. Cathy Wright and I brought seeds back from Siberia, and we will attempt a more extensive test in the coming years.

-P. Holloway

FOOD FOR TRIVIA FANS

Ever wonder what those Latin words mean that make up a plant name? Here's a list of some common fruit names:

Fragaria (fragrant) x ananassa (pine-apple-like)- strawberry

Malus (apple) baccata (having fruit with fleshy coats)- Siberian crabapple

Vaccinium (no clear meaning) vitis-idaea (vine of Mt. Ida, Greece) - lingonberry, lowbush cranberry This is neither a vine nor found on Mt Ida--strange!

Lonicera (no clear meaning) caerulea (blue) edulis (edible)

Prunus (plum) padus (Theophrastus' name for St. Lucie cherry)- European birdcherry

Ribes (from the Persian for acid-tasting) triste (sad, dull-colored) - red currant

Hippophae (unknown meaning, word used by Theophrastus) rhamnoides (prickly)

Makes you wonder, doesn't it? Readers will have to suffer through more of this trivia if I don't receive more information for the newsletter!

HortScience 25(12):1671–1672. 1990.

'Balder' Red Raspberry

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Additional index words. *Rubus idaeus*, fruit breeding, fruit quality, winter hardiness

'Balder' is a new red raspberry (*Rubus idaeus* L.) cultivar released from the breeding program at the Dept. of Horticulture, Agricultural Univ. of Norway. The cultivar has been noted for its exceptionally high level of winter hardiness, early and concentrated ripening, easy fruit release, and good processing quality (Fig. 1). 'Balder' was introduced in Norway in 1988. In Norse mythology, 'Balder' is the name of a god with many good qualities.

Origin

'Balder' was selected in 1980 from a 1975 cross of 'Norna' x 'Malling Jewel'. 'Norna' is of Norwegian origin, from a 1944 cross of 'Preussen' x 'Lloyd George' at the Njos Research Station, and was introduced in 1964 (Hjeltnes, 1964; Oydvin, 1971). 'Norna' produces high yields and is relatively frost tolerant, but problems with crumbliness have reduced its commercial value (Redalen, 1977). 'Malling Jewel' is from a cross of 'Preussen' x ('Pyne's Royal' selfed x 'Lloyd George' selfed) at East Malling, U.K., introduced in 1950 (Cormack and Woodward, 1977; Grubb, 1950). 'Malling Jewel', which was widely grown in Britain, has not been grown in Norway because of its susceptibility to winter injury. 'Balder' was tested as H 4-10-07, and has previously been mentioned under this designation (Redalen, 1986, 1987).

'Balder' is now established in plots at research sites throughout Norway, and preliminary reports on performance have been received from several of these. It has been noted for its high level of winter hardiness.

Performance and description

Yield and fruit size data for 'Balder' are compared with those of 'Veten', which is widely grown in Norway, 'Glen Clova', which is widely grown in Scotland (Cormack and Woodward, 1977), and 'Meeker' and 'Skeena', both of which are widely grown in the Pacific Northwest of North America (Daubeny, 1986) (Table 1). The data from 1985, 1986, and 1987 were obtained from a trial with two replications of 'Balder' and four replications of each of the other cultivars established at the Agricultural Univ. of Norway in 1983. There were 10 plants per plot. Each spring the floricanes were topped at a height of 150 cm and thinned to six canes per plant. Fruit size data were the mean weight of 50 fruits per harvest.

Over the 3-year period, 'Balder' generally produced significantly higher yields than the other cultivars. It was surpassed in yield by 'Glen Clova' with 0.20 kg/plant in 1985, but had higher yields than the other cultivars in 1986 and 1987. Fruit size of 'Balder' was comparable to the other cultivars.

Table 1. Yield and fruit size of 'Balder' compared with other cultivars at Aas, Norway. Mean values over 3 years (1985–1987).

Cultivar	Total yield (kg/plant)	Fruit size (g/fruit)
Balder	2.01	3.3
Glen Clova	1.79	3.4
Meeker	1.69	3.6
Skeena	1.18	2.9
Veten	1.50	3.5
Standard error	0.046	0.038
P (F)	<0.01	<0.01

Table 2. Soluble solids concentration (SSC), titratable acids, and juice color of 'Balder' compared with other cultivars at Aas, Norway. Mean values over 3 years (1984–1986).

Cultivar	SSC (%)	Acid (% citric)	Absorption at 515 nm of 5% juice
Balder	8.9	2.25	0.988
Glen Clova	7.9	1.82	0.535
Meeker	10.6	1.69	0.623
Skeena	9.3	1.93	0.695
Veten	8.4	1.97	0.789
Standard error	0.042	0.065	0.068
P (F)	<0.01	<0.01	<0.01

Received for publication 19 Jan. 1990. The cost of publishing this paper was defrayed in part by the payment of page charges. Under postal regulations, this paper therefore must be hereby marked *advertisement* solely to indicate this fact.

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occurrence of cane diseases of 'Balder' and other cultivars at Aas, Norway. Mean values over 3 years (1986–1988).

Cultivar	Damaged buds/cane (no.)	Premature leaf senescence and shrivelling of immature fruit (rating)[z]	Occurrence of cane disease symptoms (rating)[z]
Balder	5.7	0.2	4.7
Glen Clova	11.5	1.9	5.4
Meeker	28.7	2.5	3.5
Skeena	12.5	2.9	4.0
Veten	10.7	3.0	4.4
Standard error	0.536	0.473	0.447
P (F)	<0.01	<0.05	NS

[z]Rating: 0 = best, 9 = poorest.
[NS]Nonsignificant.

Fig. 1. Lateral and fruits of 'Balder' red raspberry.

Fruit of 'Balder' has a somewhat dark and dull appearance and is relatively soft; it is well-suited for processing but not for fresh use. Juice from fruits of 'Balder' is medium-sweet, has high acidity and dark color (Table 2). Flavor and color of jam produced from fruits of 'Balder' have been judged as excellent (Heiberg, 1989), while fresh fruit flavor has been judged to be only acceptable. Fruits of 'Balder' separate readily from the receptacle and thus should be well-suited for machine harvesting (Redalen, 1987).

Flowers of 'Balder' are self-fertile, and druplet set has been high. No problems with crumbliness have been noted.

The harvest season for 'Balder' starts about the same time as for 'Glen Clova' and 'Veten' and is usually 2 to 5 days earlier than for 'Skeena' and 'Meeker'. The season ends at the same time as for 'Veten' and before those of 'Glen Clova', 'Skeena', and 'Meeker'. Like 'Veten', 'Balder' has a relatively concentrated season, another trait desirable for machine harvest.

'Balder' produces numerous primocanes that are erect and vigorous, with dark purple prickles largely restricted to the basal portions. The primocanes are slightly waxy and glabrous (nonpubescent) and have the gene h in the homozygous recessive state. Floricanes are light brownish-grey. Fruits may be hidden by large leaves and can be rather difficult to find for hand harvest.

'Balder' has shown exceptionally good winter hardiness in trial plantings at several locations in Norway. For example, in 1988 at a location near Vegaarshei, where winter injury frequently occurs, 'Balder' had a mean score of 1.5 for injury on a 1 to 5 scale, where 1 = the least and 5 the most damage. In contrast, 'Veten' had a score of 4.5, 'Malling Admiral' and 'Malling Orion', both from England, had scores of 3.0 and 2.0, respectively, and 'Glen Moy' and 'Glen Isla', both from Scotland, had scores of 4.0 and 3.0, respectively. Over a 3-year period, at Aas, the buds on canes of 'Balder' were relatively intact while 'Glen Clova', 'Meeker', 'Balder' showed less premature leaf senescence and shrivelling of immature fruit than the other cultivars. These symptoms could be caused by several factors including cane diseases and winter injury.

Although the buds on the floricanes of 'Balder' burst relatively early in the spring, no problems with late spring frost have occurred (Redalen, 1986). The leaves on the primocanes of 'Balder' are shed early in the fall compared with most other cultivars.

'Balder' and the other cultivars growing at Aas were equally susceptible to several cane diseases (Table 3), among which spur blight [*Didymella applanata* (Niessl) Sacc.] predominated. It appeared particularly susceptible to cane spot, *Elsinoë veneta* (Burkh.) Jenkins.

Fruits of 'Balder', like those of 'Veten', were rather susceptible to postharvest fruit rot (*Botrytis cinerea* Pers. and *Mucor* spp.).

Adaptability and use

'Balder' seems well-adapted in locations where other cultivars, e.g., 'Veten', have problems with winter injury. The fruit seems to meet the requirements of the processing industry, and machine harvesting should be possible because of the easy fruit abscission. The high level of winter hardiness gives 'Balder' a potential value as parent in breeding for hardiness.

Availability

Limited quantities of root cuttings or small plants free of raspberry bushy dwarf virus and the raspberry mosaic virus complex are available from The National Seed Council, Moerveien 2, N-1430 Aas, Norway.

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